APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,630	08/25/2003	Ernst B. Carter	EXIT-00101	5318

28960   7590   06/13/2007
HAVERSTOCK & OWENS LLP
162 NORTH WOLFE ROAD
SUNNYVALE, CA 94086

EXAMINER
SANDOVAL, KRISTIN D

ART UNIT	PAPER NUMBER
2132	

MAIL DATE	DELIVERY MODE
06/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>27 February 2007</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-52</u> is/are pending in the application.

    4a) Of the above claim(s) <u>53-58</u> is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-15,17-39 and 41-52</u> is/are rejected.

7)☒ Claim(s) <u>16 and 40</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>25 August 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-52 are pending. Claims 53-58 are cancelled.

Election/Restrictions

2.   Applicant's election of claims 1-52 in the reply filed on February 27, 2007 is

acknowledged. Because applicant did not distinctly and specifically point out the supposed

errors in the restriction requirement, the election has been treated as an election without traverse

(MPEP § 818.03(a)).

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or
> any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and
> requirements of this title.

3.   Claims 1, 2 and 4-13 rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter. A computer program product and code is reasonably

interpreted by one of ordinary skill as just software, it is a system of software, per se. In these

claims the function of the program code is just software not any hardware. Warmerdam, 33 F.3d

at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some

computer-readable medium it becomes structurally and functionally interrelated to the medium

and will be statutory in most cases since use of technology permits the function of the descriptive

material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035

(Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases

computer efficiency held statutory) and Warmerdam, 33 F.3d at 1360-61,31 USPQ2d at 1759

(claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory). Data structures not claimed as embodied in computer-readable media are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory. Similarly, computer programs code claimed as computer instructions per se, i.e., the descriptions or expressions of the programs, are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. Accordingly, it is important to distinguish claims that define descriptive material per se from claims that define statutory inventions. So, it does not appear that a claim reciting software with functional descriptive material falls within any of the categories of patentable subject matter set forth in § 101..

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4.   Claims 17-22 and 43-45 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 17 recites the limitation "encrypted file names" in line 2. There is insufficient antecedent basis for this limitation in the claim. Although claim 16 recites generating an encrypted file name key, it makes no mention of actually encrypting the file names themselves.

Claims 17-22 and 43-45 recite the limitation "the secondary device" in line 1. There is insufficient antecedent basis for this limitation in the claim since a dependent claim inherits the terms from the claim it depends on directly, not two or three claims removed.

Claims 22 and 45 recite the limitations, "wherein the secondary device is a socket connection" and "wherein the secondary device comprises a communication channel" respectively. Neither a socket connection nor a communication channel is a device.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5.   Claims 1-3, 26 and 48 rejected under 35 U.S.C. 102(b) as being anticipated by Marino et al. (Marino), U.S. Patent No. 5,029,206.

As per claims 1-3, 26 and 48:

Marino discloses a computer system comprising:

a. a first device having an operating system kernel, the operating system kernel

configured to encrypt clear data using an encryption key to generate cipher data, the first device

further configured to decrypt the cipher data using the encryption key to generate the clear data;

and

b. a second device coupled to the first device and configured to exchange cipher data with

the first device (3:1-38).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 4-7, 9, 11, 14, 15, 17, 18, 27-29, 36-39, 41 and 49-51 rejected under 35 U.S.C.

103(a) as being unpatentable over Marino in view of Noble et al. (Noble), U.S. PG-PUB

2003/0005300.

As per claims 4-7, 27-29, 36-39 and 49-51:

Marino substantially teaches a method of encrypting data, the method comprising:

receiving clear data; and executing kernel code in an operating system, the kernel code using a

key to encrypt the clear data to generate cipher data, the kernel code further using the key to

decrypt the cipher data to generate the clear data (3:1-38). Marino fails to disclose the use of a symmetric key encryption algorithm based on a block cipher wherein the algorithm comprises Rijndael and the block size is 128 bits.

However, the Rijndael symmetric key encryption algorithm based on a block size of 128 bits was well known in the art at the time of applicant's invention as discloses in Noble. Noble teaches the use of the Rijndael symmetric key encryption algorithm based on a block cipher with a block size of 16 bytes in a similar field of endeavor (paragraphs 0087-0093).

It would have been obvious to one of ordinary skill in the art at the time of applicant's death to utilize the Rijndael algorithm because it was approved to be the AES standard, offering better security in addition to offering superior performance, particularly in key set-up as taught by Noble (paragraph 0090).

As per claims 9, 11 and 39:

Marino fails to disclose the symmetric encryption algorithm comprising DES or BLOWFISH. However, DES and BLOWFISH were well known in the art at the time of applicant's invention as demonstrated by Noble. Noble discloses interchanging Rijndael with BLOWFISH in making comparisons with other encrypting file systems (paragraph 0119) and utilizing DES in another file encryption system CFS (paragraph 0145).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to test and try other symmetric encryption algorithms in order to compare performance as suggested in Noble (paragraph 0119).

As per claims 14, 15, 17, 17, 18 and 41:

Marino substantially teaches a memory portion comprising a first logical protected memory configured to store encrypted file data and the file names associated with them and a second logical protected memory configured to store key data. And further comprising an encryption key management system, the encryption key management system configured to control access to the encrypted file data and only if certain access permissions have certain values (3:1-38, 6:16-20, 7:26-35).

Marino fails to teach the file names and keys being encrypted. However, Noble discloses both file names and keys being encrypted (paragraphs 0088-0093, 0090-0108, 0053). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to encrypt both the file names and the keys in order to increase security against physical attacks as suggested by Noble (paragraph 0041).

7.   Claims 8, 10 and 30 rejected under 35 U.S.C. 103(a) as being unpatentable over Marino and Noble in view of Schrader et al. (Schrader), U.S. Patent No. 5,903,881.

As per claims 8, 10 and 30:

Marino and Noble fail to disclose the use of Triple-DES as the symmetric key encryption algorithm and a symmetric key of at least 1024 bits. However, Triple-DES and a 1024 bit encryption key were well known in the art at the time of applicant's invention as demonstrated by Schrader. Schrader utilizes 1024 bit Triple-DES to encrypt a file for a banking transaction (17:12-21). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to utilize 1024 bit Triple-DES in order to strengthen the encryption and thus the security of the system as a whole.

8.   Claims 12, 13 and 52 rejected under 35 U.S.C. 103(a) as being unpatentable over Marino

and Noble and further in view of Fish et al. (Fish), U.S. Patent No. 5,727,206.

As per claims 12, 13 and 52:

Marino and Noble fail to disclose the use of a Unix System-V Revision operating system.

However, Unix System-V Revision was well known in the art at the time of applicant's invention

as demonstrated by Fish in a similar field of endeavor. Fish discloses the use of the Unix SVR4

with a CFS system as mentioned in Noble (12:22-32). It would have been obvious to one of

ordinary skill in the art at the time of applicant's invention to use a Unix SVR4 operating system

because the use of vnodes makes integration more seamless as taught by Fish (12:22-32).

9.   Claims 19, 21, 32 and 44 rejected under 35 U.S.C. 103(a) as being unpatentable over

Marino and Noble and further in view of Basu et al. (Basu), U.S. Patent No. 6,836,888.

As per claims 19, 21, 32 and 44:

Marino and Noble fail to teach a secondary device being accessed through file abstraction

and the secondary device comprising a swap device.

However, a swap device and file abstraction were well known in the art at the time of

applicant's invention as shown in Basu. Basu discloses kernel memory linked to a swap device

that is accessed through vnodes which supports file abstraction in Unix systems (11:34-55). It

would have been obvious to one of ordinary skill in the art at the time of applicant's invention to

utilize a swap device accessed through file abstraction because file abstraction allows continuity

across various platforms to the user.

10.   Claims 20, 31 and 43 rejected under 35 U.S.C. 103(a) as being unpatentable over Marino

and Noble and further in view of Magee et al. (Magee), U.S. Patent No. 5,729,710.

As per claims 20, 31 and 43:

Marino and Noble fail to teach a secondary device comprising a backing store. However,

backing stores were well known in the art at the time of applicant's invention as demonstrated by

Magee. Magee teaches kernel memory being bound to a backing store (35:34-41). It would

have been obvious to one of ordinary skill in the art at the time of applicant's invention to use a

backing store because it would lower the overall cost of implementation and allows for a place

for instructions before being stored in main memory.

11.   Claims 22-24, 33-35 and 45-47 rejected under 35 U.S.C. 103(a) as being unpatentable

over Marino and Noble and further in view of LaRue, U.S. Patent No. 6,477,545.

As per claims 22-24, 33-35 and 45-47:

Marino and Noble fail to teach the secondary device being a socket connection or

communication channel comprising the Internet. However, a socket connection and

communication channel comprising the Internet were well known in the art at the time of

applicant's invention as demonstrated by LaRue. LaRue discloses the use of communication

channels that support and include socket connections that are opened between nodes over the

Internet (6:56-7:25). It would have been obvious to one of ordinary skill in the art at the time of

applicant's invention to utilize socket connections and communication channels to connect

memory to the Internet in case of sending information over the Internet to another client or to a

remote storage site.

12.   Claim 25 rejected under 35 U.S.C. 103(a) as being unpatentable over Marino and Noble

and further in view of Chien et al. (Chien), U.S. PG-PUB 2002/0065876.

As per claims 25:

Marino and Noble fail to teach encrypting and decrypting the pathname to the encrypted

files. However, Chien discloses a method which checks to see whether or not a directory

contains encrypted files and if it does it encrypts the entire pathname (paragraph 0238). It would

have been obvious to one of ordinary skill in the art at the time of applicant's invention to

encrypt the pathname to the encrypted files in order to increase the security of the encrypted file

since it would be more difficult for someone to located the file.

Allowable Subject Matter

Claims 16 and 40 objected to as being dependent upon a rejected base claim, but would

be allowable if rewritten in independent form including all of the limitations of the base claim

and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Kristin D. Sandoval whose telephone number is 571-272-7958.

The examiner can normally be reached on Monday - Friday, 8:00-5:30.
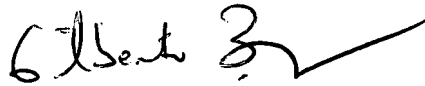
If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kristin D Sandoval
Examiner
Art Unit 2132

KDS

GILBERTO BARRON JR
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100